ELSEVIER

Available online at www.sciencedirect.com

SCIENCE DIRECT®

Journal of Applied Logic 3 (2005) 369–370

JOURNAL OF APPLIED LOGIC

www.elsevier.com/locate/jal

Editorial

DEON04, the 7th international workshop on the uses of Deontic Logic in Computer Science was held in Madeira, Portugal, between the 26th and the 28th of May 2004. Eighteen presentations were given at the workshop, including two invited talks. In addition to its traditional topics, DEON04 had a special emphasis on the use of deontic logic for multi-agent systems.

Following the workshop, six of the authors of accepted papers were invited to revise and expand their articles based on written and verbal reviews they had received. Five of these authors accepted the invitation and submitted extended papers that were refereed by at least two more international experts. Revised versions of these are included in this special issue.

Mark Brown's "Obligation, Contracts, and Negotiation: Outlining an Approach" arose from his invited address. The paper provides a summary of the evolution of Brown's thinking about the issues, and consequently, of the development of the literature on the topic. Both retrospective and prospective, Brown's discussion proceeds through a series of questions and suggestions to the development of a model theory for agents, contracts, and organisations in branching time. A primary goal for this semantics is to provide a way "to describe the negotiation and renegotiation of contracts" and "to discuss the dynamics of the normative situations of hierarchical organisations."

Michael Wooldridge's and Wiebe van der Hoek's contribution concerns an extension of the work by Alur and colleagues on Alternating-Time Logic (ATL) by introducing a normative dimension. In the enriched logic not only one can find the notion of strategy to achieve a configuration, typical of ATL, but also the notion of constraint, and obligation of some actions with respect to a normative system. In addition to their theoretical investigation, the authors evaluate the proposal by using it to model the social contract.

Like Brown, Lennart Åqvist investigates a model theory for deontic operators in the context of branching time in his "Combinations of Tense and Modality: On the R_t Approach to Temporal Logic with Historical Necessity and Conditional Obligation". Åqvist builds his system in layers, beginning with what he calls a "two-dimensional temporal logic with explicit realisation operators". Then he adds a historical necessity operator, and finally a dyadic deontic operator for conditional obligation. Åqvist provides sound and complete axiomatisations for each of these three systems.

In "Dilemmas in Deontic Logic", Lou Goble shows how a deontic dilemma leads to a deontic explosion (in which everything is required) if we accept familiar principals of inheritance and aggregation for deontic logic, together with the principal that anything

1570-8683/$ – see front matter
doi:10.1016/j.jal.2005.04.001

follows from a contradiction. He reviews different attempts to develop logics that permit deontic dilemmas without deontic explosion, then proposes a system based on a restricted inheritance rule that accomplishes this task without losing some other attractive inference patterns.

Jörg Hansen picks up the problem of deontic dilemmas in "Conflicting Imperatives and Dyadic Deontic Logic". Hansen extends the approaches of van Fraassen and Horty by developing an account that incorporates dyadic versions of their two monadic obligation operators. The dyadic operators are intended to provide a sensitivity to circumstances that is supposedly lacking in the original van Fraassen/Horty approach.

Alessio Lomuscio *
University College London, UK
E-mail address: A.Lomuscio@cs.ucl.ac.uk

Donald Nute
The University of Georgia, USA

Available online 13 May 2005

* Corresponding author.